

REMARKS

The Office Action dated January 4, 2007, and the patent relied on therein have been carefully reviewed, and in view of the above changes and following remarks reconsideration and allowance of all the claims pending in the application are respectfully requested.

Claims 1-26 stand rejected. By this Amendment, claims 1-26 have been amended, as described below. Claims 1-26 remain pending.

Amendments To The Claims

Applicant has amended each of claims 1-26 to generally improve their respective forms and/or to broaden their respective scopes. As the amendments to claims 1-26 are not in response to prior art, are directed to formal matters and broaden the scope of the amended claims, there is, therefore, no prosecution-history estoppel results from the amendments.

The Rejection Under 35 U.S.C. § 102(e) Over Talagala

Claims 1-26 stand rejected under 35 U.S.C. § 102(e) as anticipated by Talagala et al. (Talagala), U.S. Patent No. 7,017,107 B2.

Applicants respectfully traverse this rejection. Accordingly, Applicants respectfully submit that the subject matter according to any of claims 1-26 is not anticipated by Talagala.

Regarding claim 1, Applicants respectfully submit that Talagala does not disclose (1) a pathway determination system, (2) the claimed sorter, (3) the claimed assigner, and (4) the claimed collector.

Regarding the preamble of claim 1, Applicants respectfully submit that Talagala does not disclose a pathway determination system for a data storage system. In contrast, Applicants respectfully submit that Talagala discloses a data storage system for performing error detecting scrubbing operations for detecting and scrubbing errors referred to as “silent errors.” Details regarding silent errors are disclosed by Talagala at column 2, line 54, through column 3, line 50. While Talagala discloses an interconnection fabric 157 that allows each node of the interconnection fabric to have multiple possible paths to use when communicating with another node, Talagala discloses nothing regarding determining a particular pathway through the interconnection fabric other than the general concept that multiple independent paths may allow a source node and a destination node to continue communicating with each other even if one or

more communication paths or nodes between the source and destination nodes become inoperative. (See Talagala, column 7, lines 20-44.) Accordingly, Talagala only discloses a system that reads data from where the data is known to be, not a pathway determination system.

Further regarding claim 1, Applicants respectfully submit that Talagala does not disclose the claimed sorter that is capable of receiving a read request and separating the read request into an appropriate segment size for sending to the storage devices of the data storage system. As support for the Examiner's assertion that Talagala discloses the claimed sorter, the Examiner cites column 10, lines 48-65, of Talagala and subsequently urges to *"note that the scrubbing operation here is similar to a read request in which the array controller, in the case of the invention, the sorter, calculate the checksum for every unit of data refers to a segment of data size...."* (See Office Action, page 2, line 25, through page 3, line 2; italics in original.)

Applicants respectfully traverse the Examiner's subsequent urging that seems to try to create a nexus between a Talagala scrubbing operation and a read request. Even assuming, arguendo, that such a nexus exists, it is respectfully noted that the Examiner's assertion and subsequent urging simply do not identify with any specificity where Talagala discloses the concept of separating a read request into an appropriate segment size for sending to the storage devices of the data storage system. Further, the Examiner's assertion and subsequent urging do not identify with any specificity where Talagala discloses a sorter that is capable of receiving a read request and separating the read request into an appropriate segment size for sending to the storage devices of the data storage system.

Moreover, the specific portion of Talagala cited by the Examiner as support for the assertion that Talagala discloses the claimed sorter actually discloses in general terms that a scrubbing operation can be performed independently from any read requests for data; that a scrubbing operation can be based on a checksum for every unit of data written to an array; that the checksum can be cached and used for verifying data on subsequent reads; and that an array controller may read all of the data to be scrubbed, calculate a new checksum for each unit of data, and compare the new checksum to an already-calculated checksum. (See Talagala, column 10, lines 48-65.) Thus, Applicants respectfully submit that the Examiner's assertion and subsequent urging regarding the claimed sorter are without basis. Accordingly, Applicants respectfully submit that Talagala does not disclose the claimed sorter.

Further still regarding claim 1, Applicants respectfully submit that Talagala does not disclose the claimed assigner that is capable of selecting a read permutation satisfying the received read request, such that the selected read permutation is based at least in part on a predetermined metric, and such that the assigner is capable of sending the selected read permutation to the storage devices of the storage system. As support for the Examiner's assertion that Talagala discloses the claimed assigner, the Examiner cites column 10, line 48, through column 11, line 8, and subsequently urges that *"it is important to acknowledge the teaching of the pre-calculated checksum which in the case of the invention is the predetermined metric which is based on the read permutation or the reconstructed data checksum"*. (See Office Action, page 3, lines 6-9; italics in original.)

Applicants respectfully submit that the specific portion of Talagala cited by the Examiner actually discloses in general terms that a scrubbing operation can be performed independently from any read requests for data; that a scrubbing operation can be based on a checksum for every unit of data written to an array; that the checksum can be cached and used for verifying data on subsequent reads; and that an array controller may read all of the data to be scrubbed, calculate a new checksum for each unit of data, and compare the new checksum to an already-calculated checksum. (See Talagala, column 10, lines 48-65.) It is respectfully noted that the Examiner's assertion and subsequent urging do not identify with any specificity where Talagala discloses the concept of a read permutation. In fact, Applicants respectfully submit that Talagala is silent regarding the concept of a read permutation because Talagala only discloses a system that reads data from where the data is known to be, not a pathway determination system. Moreover, it is respectfully submitted that the portion of Talagala cited by the Examiner does not identify with any specificity where Talagala discloses the claimed assigner that is capable of selecting a read permutation satisfying the received read request, such that the selected read permutation is based at least in part on a predetermined metric, and such that the assigner is capable of sending the selected read permutation to the storage devices of the storage system.

As with the claimed sorter, Applicants respectfully submit that the Examiner's assertion and subsequent urging are not the claimed assigner.

Even further regarding claim 1, Applicants respectfully submit that Talagala does not disclose the claimed collector that is capable of receiving the requested data from the N storage devices in response to the selected read permutation being sent to the storage devices. As

support for the Examiner's assertion that Talagala discloses the claimed collector, the Examiner cites column 4, lines 1-10, of Talagala and subsequently urges that "*the disk controller plays the role of the collector, 'receiving the read data from within a data range from at least one of the disk drives'.*" (See Office Action, page 3, lines 12-13; italics in original.)

Applicants respectfully submit that the similarities between the claimed collector and the Examiner's cite and subsequent urging, at best, relates to the concept of a receiving requested data. Nevertheless, Applicants respectfully submit that the Examiner's assertion and subsequent urging are tenuous because the Examiner has not shown that Talagala discloses, in particular, anything regarding a read permutation. Consequently, the Examiner has not shown that Talagala discloses the claimed collector capable of receiving the requested data from the N storage devices in response to the selected read permutation being sent to the storage devices.

Lastly regarding claim 1, Talagala does not suggest any of the subject matter according to claim 1.

Thus, claim 1 is allowable over Talagala. It follows that claims 2-13, which each incorporate the limitations of claim 1, are each allowable over Talagala for at least the same reasons that claim 1 is considered allowable over Talagala.

Regarding claim 14, Applicants respectfully submit that claim 14 is allowable over Talagala for reasons that are similar to the reasons that claim 1 is considered allowable. More specifically, Applicants respectfully submit that Talagala at least does not disclose a method for determining a pathway for obtaining data stored in a data storage system. Further, Talagala does not disclose a method comprising separating a read request into an appropriate segment and size for sending the storage devices of the data storage system, selecting a read permutation from possible read permutations satisfying the received read request, and sending the selected read permutation to the storage devices of the storage system.

Thus, claim 14 is allowable over Talagala. It follows that claims 15-26, which each incorporate the limitations of claim 14, are each allowable over Talagala for at least the same reasons that claim 14 is considered allowable.

Consequently, Applicants respectfully request that the Examiner withdraw this rejection and allow claims 1-26.

Applicants note that additional patentable distinctions between Talagala and the rejected claims exist; however, the foregoing is believed sufficient to address the Examiner's rejections. Additionally, failure of Applicants to respond to a position taken by the Examiner is not an indication of acceptance or acquiescence of the Examiner's position. Instead, it is believed that the Examiner's positions are rendered moot by the foregoing and, therefore, it is believed not necessary to respond to every position taken by the Examiner with which Applicants do not agree.

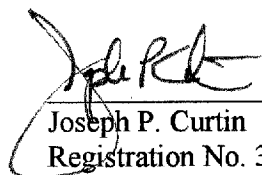
CONCLUSION

In view of the above amendments and arguments, it is urged that the present application is now in condition for allowance. Should the Examiner find that a telephonic or personal interview would expedite passage to issue of the present application, the Examiner is encouraged to contact the undersigned attorney at the telephone number indicated below.

It is requested that this application be passed to issue with claims 1-26.

Respectfully submitted,

Date: April 2, 2007



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